PPC-1221

高性能可扩展12″屏工业平板电脑

Extensible 12″ Industrial Panel PC

with High Performance

Version: C00

声明

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安全使用小常识

1. 产品使用前，务必仔细阅读产品说明书；
2. 为避免人体被电击或产品被损坏，在每次对板卡进行拔插、重新装配或配置前，须先关闭交流电源或将交流电源线从电源插座中拔掉；
3. 在需对产品进行搬动时，务必先将交流电源线从电源插座中拔掉；
4. 当需连接或拔除任何信号线前，须确定所有的电源线事先已被拔掉；
5. 为避免频繁开关机对产品造成不必要的损伤，关机后，应至少等待 30 秒后再开机；
6. 如果要进行升级或拆装等动作，须在静电放电工作台上完成所有操作，因为有些精密器件对静电放电（ESD）很敏感；
7. 如果没有静电放电工作台，可通过以下方法降低 ESD 可能造成的危害：
   a） 戴上一条防静电腕带并与相应产品的金属部分相连；
   b） 在触摸产品部件前，先触摸相应产品机箱上的金属壳；
   c） 当插拔部件时，身体最好与产品的金属机箱保持接触，以释放静电；
   d） 避免不必要的走动；
   e） 拿产品部件（尤其是板卡）时仅拿住边缘；
   f） 将产品部件置于一个接地的无静电的操作平台上。如果可能的话，使用一块导电泡沫垫（非部件的包装材料）；
   g） 不要让部件在操作平台上滑动。
8. 用十字螺丝刀进行操作，最好是强力螺丝刀（带磁性，避免螺丝遗留在机箱内）。要注意的是，一定不要将工具或零件遗漏在机箱内；
9. 保证系统良好的散热与通风。

目　录



第一章　产品介绍

简介

PPC-1221平板电脑是一款12″LCD 平板电脑，采用基于标准HPC半长卡主板与底板架构并实现模块化设计，具有平台升级简单的强大优势，能够大大降低平台升级的费用及工作量。此款平板电脑产品最大特点：超薄设计+模块化设计+可扩展2块标准PCI卡。主要应用于有显示需求但对设备尺寸有限制的工业环境。

主要功能介绍

微处理器

板载Intel® Core™ Duo L2400 CPU。

芯片组

Intel® 945GME+Intel® ICH7M芯片组

内存

提供2条200Pin DDRⅡ400/533/667MHz SO-DIMM内存槽，可支持最大内存容量4GB。（标配1.0G内存）

网络功能

1个10/100/1000Mbps以太网控制器，支持网络唤醒功能。

显示功能

主板支持1个945GME集成的VGA接口和1个48位双通道LVDS接口；整机外置1个VGA接口。

LCD特性

显示屏：12.1″彩色TFT LCD

接口：LVDS

分辨率：800×600

亮度：450cd/m2

对比度 ≥350：1

彩色深度：24 位

音频功能

板载 HD Audio，支持 MIC-in/Line-in/Speaker-out。

扩展总线

通过 1 个 PCI 主槽扩展 2 个 PCI 设备槽。

外部 IO 接口

- 1个VGA 接口；
- 2个RS-232串口
- 2个USB 2.0 接口；
- 1个RJ45网口，支持10/100/1000Mbps；
- 1组音频接口：MIC-in/Line-in/Line-out；
- 1个PS/2键盘/鼠标接口；
- 1个DC电源接口。

电源特性

此整机内置 DC-DC 宽压输入电源模块，同时标配 AC-DC 适配器：

整机 DC 宽压输入特性：

输入电压/频率：9～32V DC；

总功率：160W（Max）；

输出电压/电流：+5V@8A（Max），+5%/-5%；+3.3V@8A（Max），+5%/-5%；+12V@8A（Max），+5%/-5%；-12V@0.1A（Max），+5%/-5%。



AC-DC 适配器特性 ：

电源类型：适配适配器；

输入电压/频率：100～240V AC 50Hz/60Hz；

总功率：120W（Max）；

输出电压/电流：+19V@6.3A（Max），+5%/-5%。

主要性能指标

机械尺寸、重量与环境

- 外形尺寸：332mm（长）×240mm（宽）×75mm（高）；
- 净重：4.6Kg；
- 工作环境：

  温度：0℃～50℃；

  湿度：10%～95%（非凝结状态）；
- 贮存环境：

  温度：-20℃～60℃ ；

  湿度：10%～95%（非凝结状态）。

电磁兼容性

GB 9254-1998 辐射骚扰（A）级；传导骚扰（A）级；

GB/T 17626.x GB/T 17626.2-2006静电放电（2）级；

GB/T 17626.4-2008辐射抗扰度（2）级；

GB/T 17626.3-2006冲脉群抗扰度（2）级；

GB/T 17626.5-2008浪涌（冲击）抗扰度（2）级；

GB/T 17626.6-2008传导抗扰度（2）级；

GB/T 17626.11-2008电压暂降、电压短时中断。

可靠性

- 平均无故障工作时间：MTBF≥50000h；
- 平均维修时间：MTTR≤0.5h。

安全性

满足 GB4943 的基本要求。

机械环境适应性

- 抗振动：5-17Hz/1mm 振幅；17-200Hz/1g 峰-峰加速度；
- 抗冲击：10g 加速度，11ms 周期。

运输与贮存要求

- **运输：**

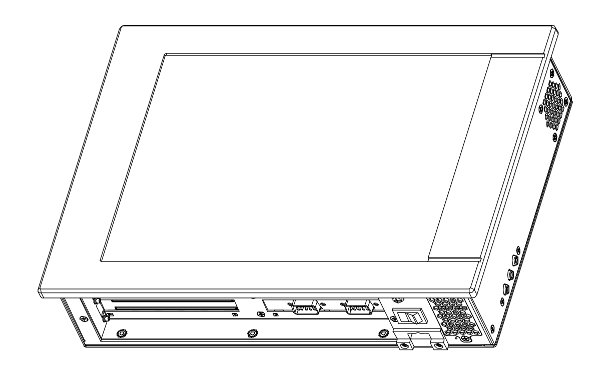
包装好的产品能以任何交通工具,运往任何地点，在长途运输时不得装在敞开的船舱和车厢中，中途转运时不得存放在露天仓库中，在运输过程中不允许和易燃、易爆、易腐蚀的物品同车（或其他运输工具）装运，并且产品不允许经受雨、雪或液体物质的淋湿与机械损坏。

- **贮存：**

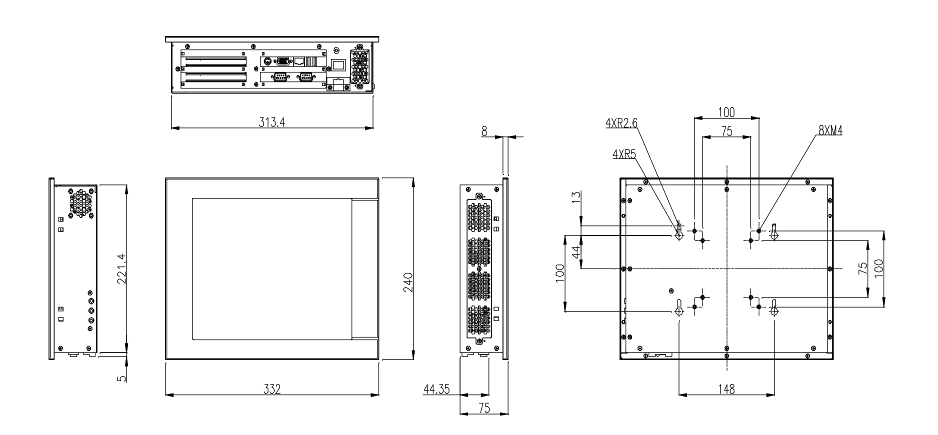
产品贮存时应存放在原包装箱内，存放产品的仓库环境温度为 0℃～40℃，相对湿度为 20%～85%.仓库内不允许有各种有害气体、易燃、易爆炸的产品及有腐蚀性的化学物品，并且无强烈的机械振动、冲击和强磁场作用。包装箱应垫离地面至少 10cm，距离墙壁、热源、冷源、窗口或空气入口至少 50cm。

第二章　安装说明

产品外观图

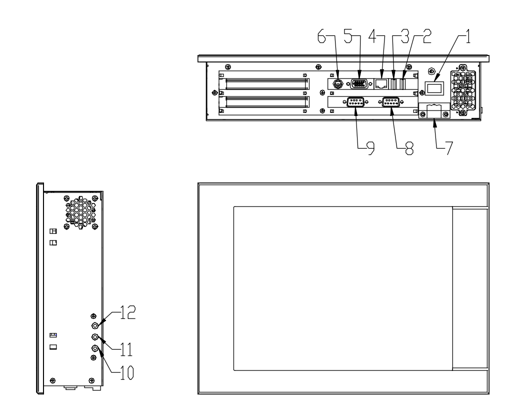


产品外形及安装尺寸图



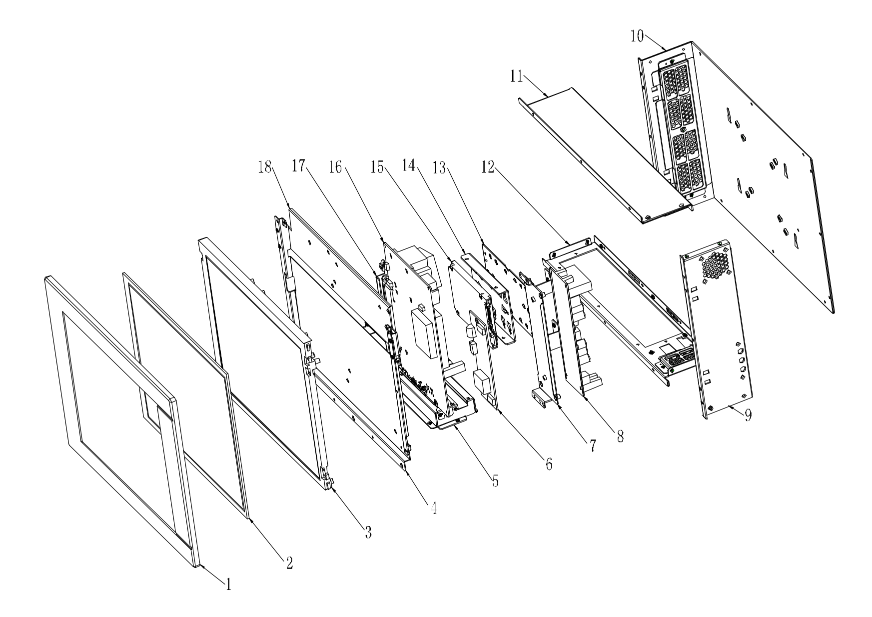
单位：mm

外部控制接口图



1、开关	2、USB 接口
3、USB 接口	4、网口
5、VGA 接口	6、键盘/鼠标接口
7、电源接口	8、COM 接口 2
9、COM 接口 1	10、音频输入
11、麦克风	12、音频输出

整体装配图



1、面板	2、触摸屏
3、液晶屏	4、屏支架 1
5、IO 架	6、升压板
7、电源支架	8、电源板
9、箱体左	10、箱盖
11、箱体上	12、箱体下
13、硬盘支架 2	14、硬盘支架 1
15、硬盘	16、主板
17、底板支架	18、屏支架 2

主板安装

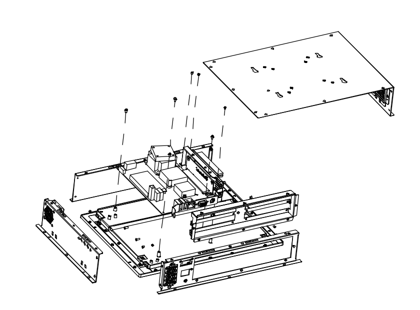
1.将液晶屏、屏支架及面板装配完成；

2.将底板装配于底板支架上，并把主板插入底板的插槽中；

3.将装配好的主板及底板组件装配到屏支架上；

4.打紧主板螺钉及底板支架螺钉；

5.然后装配 IO 架及箱体。

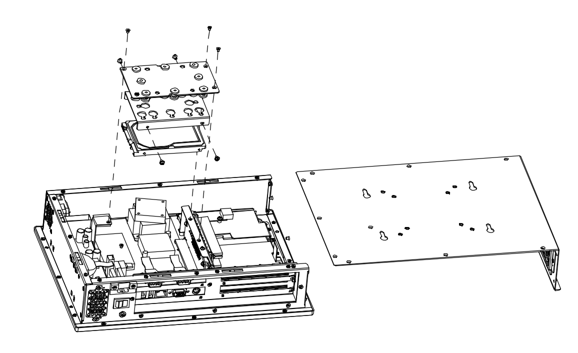


硬盘安装

1.用减震垫把硬盘支架 1 及硬盘支架 2 装配成为硬盘支架组件；

2.把硬盘装配到硬盘支架组件中，并打紧螺钉，作为硬盘组件；

3.把硬盘组件装配入机箱中，插上相应的线缆，并打紧螺钉。



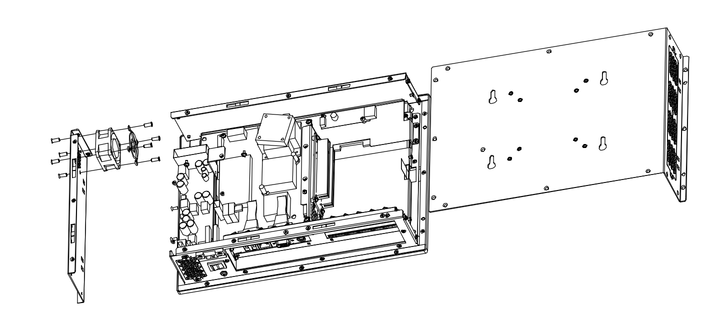


风扇安装

1.将风扇罩通过螺钉固定于风扇的入风面；

2.将风扇通过螺钉固定于箱体左上；

3.将箱体左装配到机箱中，并打紧螺钉。



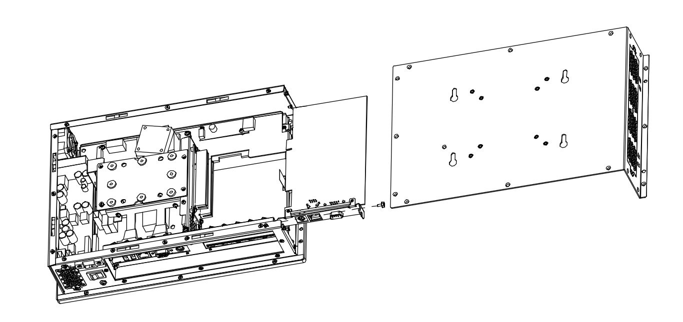
PCI 扩展卡安装

1.打开箱盖；

2.松开螺钉，取出空键仔；

3.将 PCI 扩展卡插入相应的插槽中，并打紧螺钉；

4.装上箱盖。



第三章　驱动程序安装说明

本产品的驱动程序可依据整机配套光盘内容安装，在此不做介绍。

欲获更多信息请访问研祥网站：http://www.evoc.com。

Announcement

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Safety Instructions

1. Please read the user's manual carefully before using the product.
2. Before inserting, removing or re-configuring the board, firstly turn off the AC power or remove the AC power cable from the power socket, to avoid electric shock to human body or product damage;
3. Before moving the product, please make sure all the AC power cables are removed from power socket beforehand;
4. Before you connect or unplug any signal cable, make sure all power cords are unplugged in advance;
5. To avoid power on/off computer frequently, wait at least 30 seconds after turning off the computer before re-turning on the computer.
6. If it is required to upgrade or remove the product, please implement all the operation on an ESD workstation, for some precision devices are sensitive to ESD;
7. If there's no ESD workstation, You can take the following steps to prevent damage from electrostatic discharge (ESD):
   a) Wear a grounded wrist strap and connect with the metal part of the product;
   b) Always touch the metal chassis or frame before you touch any components;
   c) Keep part of your body in contact with the metal chassis to dissipate the static charge while handling components;
   d) Avoid all unnecessary movement;
   e) Hold components (especially a board) by its edges;
   f) Place the components on a grounded, static-free surface. Use a conductive foam pad if available (not the component wrapper).
   g) Do not let the components slide on the operating platform.
8. Use cross head screwdriver to operate. A magnetic screwdriver is recommended (with magnet to avoid leaving screws in chassis). Do not leave any tools or components inside the chassis;
9. Assure abundant cooling and streamline ventilation.

Contents



Chapter 1 Product Introduction

Overview

PPC-1221 is a panel PC with 12″ LCD, which is based on standard HPC half-size motherboard and carrier and realizes modularized design; therefore, it possesses the great advantage of easy update and could reduce the cost and workload for platform update. The panel PC features in: super-slim design + modularized design + two extensible standard PCI cards. It could be applied in the industrial environment which requires a lot in display while has restriction in device dimension.

Main Function

CPU

Intel® Core™ Duo L2400 CPU

Chipset

Intel® 945GME + Intel® ICH7M

Memory

Provide two 200Pin DDR II 400/533/667MHz SO-DIMM memory slots, up to 4GB. (Standard configured with 1.0G memory)

Network Function

One 10/100/1000Mbps Ethernet controller, support Wake-on-LAN function.

Video Function

The board supports one 945GME integrated VGA connector and one 48-bit dual-channel LVDS connector; the whole box PC has one external VGA connector.

LCD Features

LCD: 12.1″ color TFT LCD

Connector: LVDS

Resolution: 800 × 600

Luminance: 450cd/m^2

Contrast: ≥350: 1

Color Depth: 24-bit

Audio Function

On-board HD Audio, support MIC-in/Line-in/Speaker-out.

Expansion Bus

Extend two PCI device slots via one PCI main slot.

External IO Connector

- One VGA connector;
- Two RS-232 COMs;
- Two USB 2.0 ports;
- One RJ45 network port, support 10/100/1000Mbps;
- A set of audio connector: MIC-in/Line-in/Line-out;
- One PS/2 keyboard/mouse connector;
- One DC power connector.

Power Features

The box PC builds in DC-DC wide-voltage input power module and standard configures AC-DC adapter:



The DC Wide-Voltage Input Feature of Box PC:

Input Voltage/Frequency: 9 ~ 32V DC;

Total Power: 160W (Max);

Output Voltage/Current: +5V@8A (Max), +5%/-5%; +3.3V@8A (Max), +5%/-5%;
+12V@8A (Max), +5%/-5%; -12V@0.1A (Max), +5%/-5%.

Features of AC-DC Adapter:

Power Type: adapter;

Input Voltage/Frequency: 100 ~ 240V AC 50Hz/60Hz;

Total Power: 120W (Max);

Output Voltage/Current: +19V@6.3A (Max), +5%/-5%

Main Performance

Mechanical Dimension, Weight and Environment

- Dimension: 332mm (L) × 240mm (W) × 75mm (H);
- Net Weight: 4.6Kg;
- Operating Environment:

  Temperature: 0°C ~ 50°C;

  Humidity: 10% ~ 95% (non-condensing);
- Storage Environment:

  Temperature: -20°C ~ 60°C;

  Humidity: 10% ~ 95% (non-condensing).

EMC

GB9254-1998 Radio disturbance class A; Conductive disturbance class A;

GB/T 17626.x GB/T 17626.2-2006 Electrostatic discharge, level 2;

GB/T 17626.4-2008 Radiative immunity, level 2;

GB/T 17626.3-2006 Burst Immunity, level 2;

GB/T 17626.5-2008 Surge (shock) immunity, level 2;

GB/T 17626.6-2008 Conductive immunity, level 2;

GB/T 17626.11-2008 Voltage dips and short supply interruption;

Reliability

- MTBF≥50000h;
- MTTR≤0.5h.

Safety

Meet the basic requirement of GB4943.

Mechanical and Environmental Adaptability

- Anti-vibration: amplitude 5 ~ 17Hz/1mm; peak-to-peak acceleration 17 ~ 200Hz/1g;
- Anti-shock: acceleration 10g, duration 11ms;

Requirements of Transportation and Storage

- **Transportation**

Well-packaged products suit for transportation by truck, ship, and plane. During transportation, products should not be put in open cabin or carriage. When transshipping in route, products should not be stored in the open without protection from the atmospheric conditions. Products should not be transported together with inflammable, explosive and corrosive substances and are not allowed to be exposed to rain, snow and liquid substances and mechanical force.

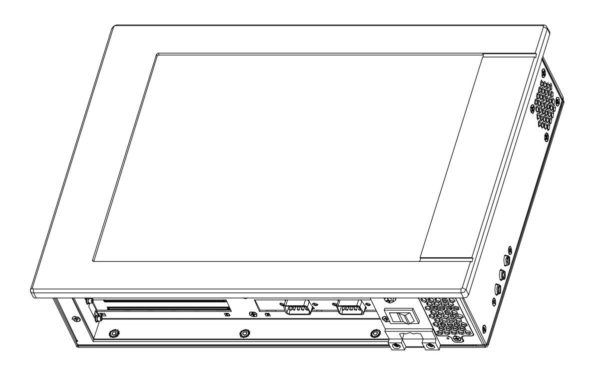


- **Storage**

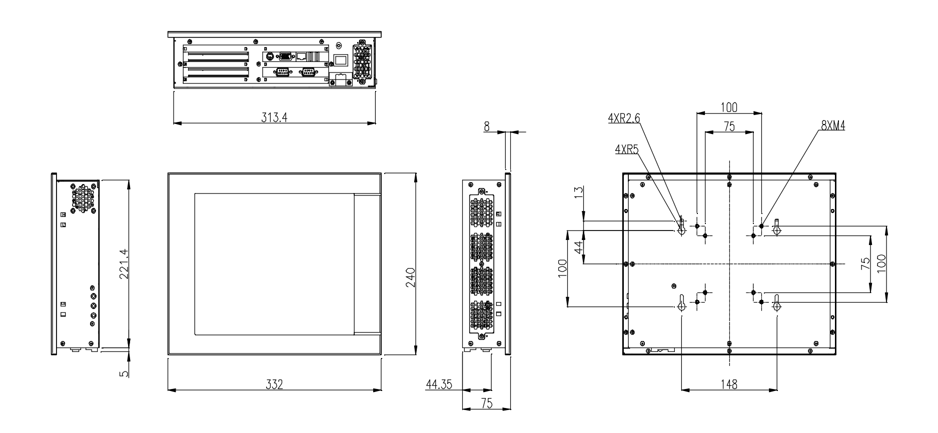
Products should be stored in package box when it is not used. And warehouse temperature should be 0°C~40°C, and relative humidity is 20%~85%. In the warehouse, there should not be harmful gas, inflammable, explosive products, and corrosive chemical products, and strong mechanical vibration, shock and strong magnetic field affection. The package box should be over ground at least 10cm height, and 50cm away from wall, thermal source, and vent.

Chapter 2 Installation

Product Outline



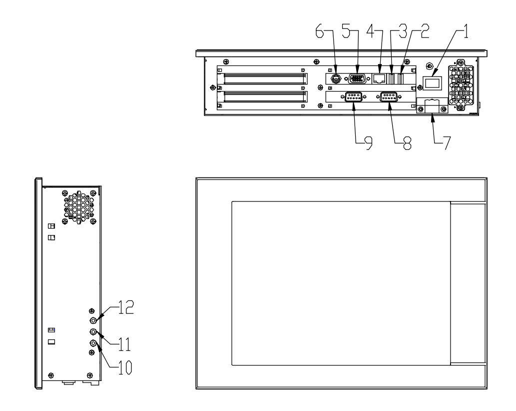
Product Appearance and Installing Dimensions



Unit: mm

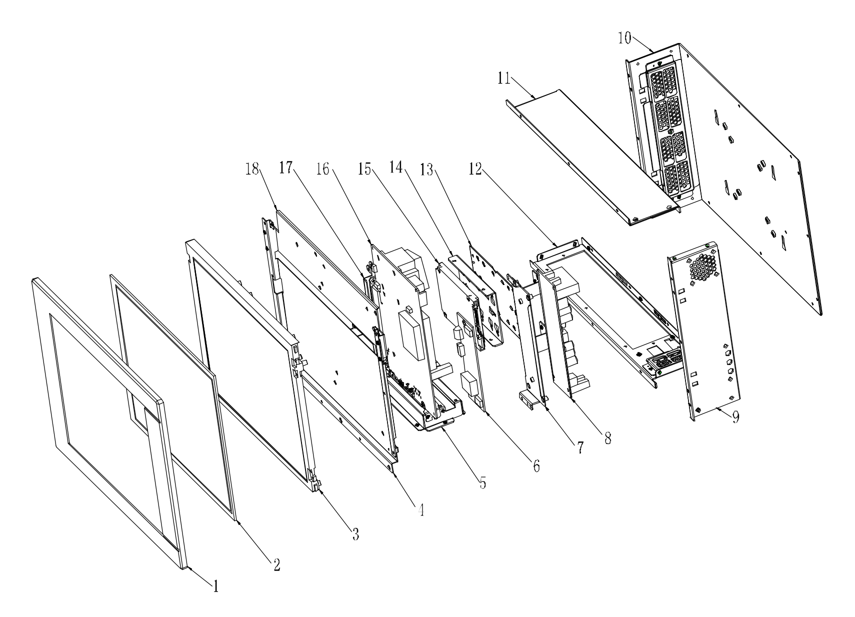


External Controlling Connectors



1. Switch	2. USB
3. USB	4. LAN
5. VGA	6. Keyboard/Mouse
7. Power	8. COM2
9. COM1	10. Audio Input
11. Microphone	12. Audio Output

Whole Assembly Drawing



1. Panel	2. Touch Screen
3. LCD	4. Screen Bracket 1
5. IO Bracket	6. Inverter
7. Power Bracket	8. Power Board
9. Left of the Chassis	10. Cover
11. Top of the Chassis	12. Bottom of the Chassis
13. Hard Disk Bracket 2	14. Hard Disk Bracket 1
15. Hard Disk	16. Motherboard
17. Carrier Bracket	18. Screen Bracket 2



Install the Motherboard

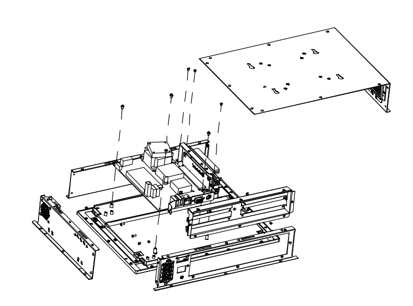
1. Assemble the LCD, screen bracket and panel together;

2. Assemble the carrier on its bracket and insert the motherboard in the slot on carrier;

3. Assemble the motherboard and carrier components on the screen bracket;

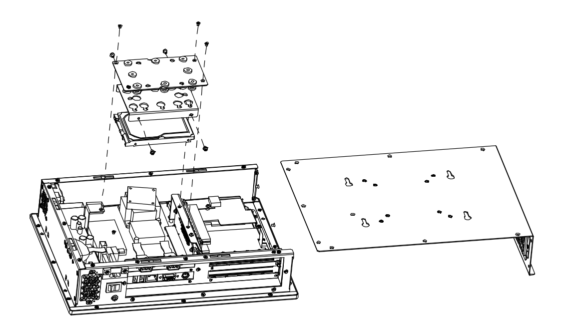
4. Tighten the screws on motherboard and carrier bracket;

5. Then assemble the IO bracket and chassis.



Install the Hard Disk

1. Assemble the hard disk bracket 1 and hard disk bracket 2 as hard disk bracket components via shock absorption pad;
2. Assemble the hard disk in the hard disk bracket components and tighten the screws as hard disk components;
3. Assemble the hard disk components in the chassis, plug in the corresponding cables and tighten the screws.

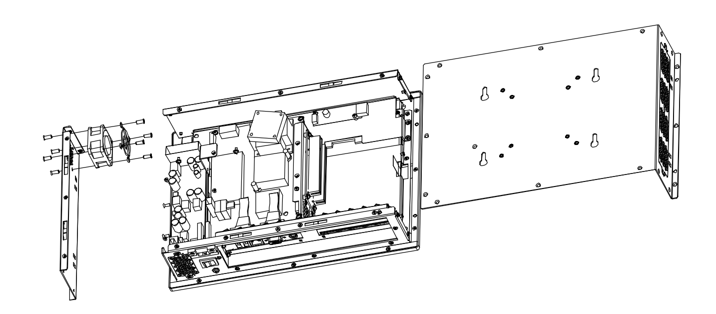


Install the Fan

1. Fix the fan shield at the inlet side of the fan via screws;

2. Fix the fan on the left of the chassis via screws;

3. Assemble the left of the chassis and tighten the screws.



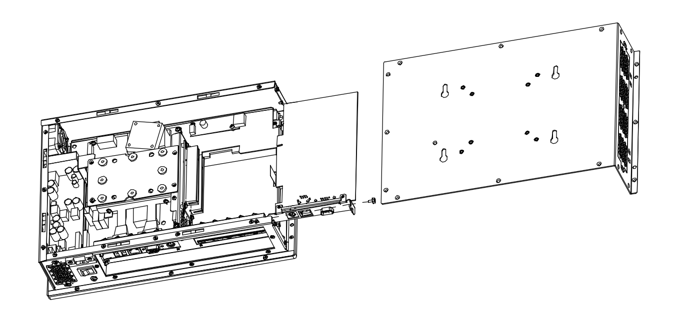
Install the PCI Extension Card

1. Open the cover;

2. Loosen the screws and take out the slot cover;

3. Insert the PCI extension card into the corresponding slot and tighten the screws;

4. Install the cover.



Chapter 3 Install the Driver

Regarding the installation of the driver program of the product, please refer to the CD equipped with PC.

Please visit: http://www.evoc.com for more information.